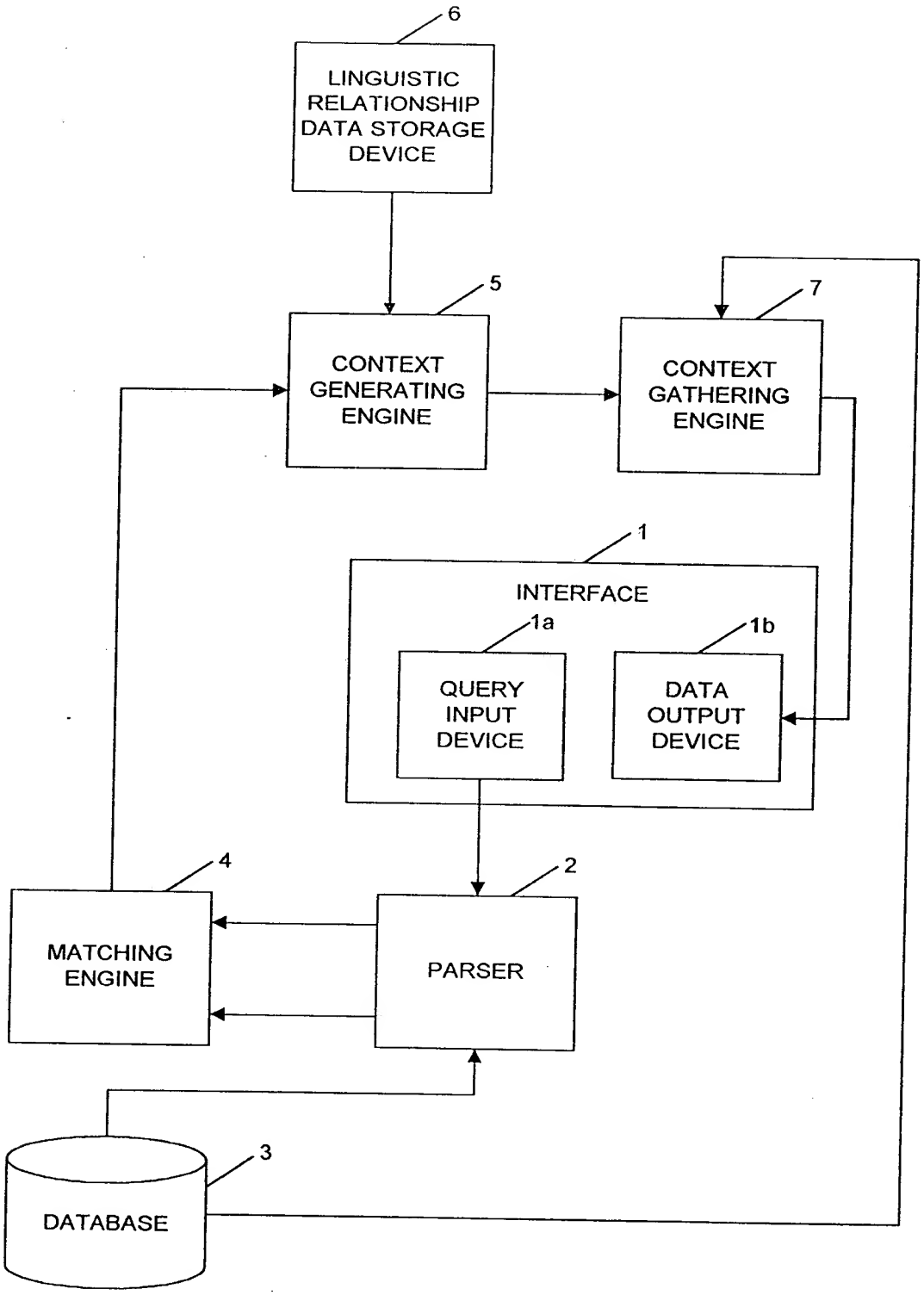

6
LINGUISTIC RELATIONSHIP DATA STORAGE DEVICE
5
CONTEXT GENERATING ENGINE
7
CONTEXT GATHERING ENGINE
1
INTERFACE
1a
QUERY INPUT DEVICE
1b
DATA OUTPUT DEVICE
4
MATCHING ENGINE
2
PARSER
3
DATABASE

Fig 1

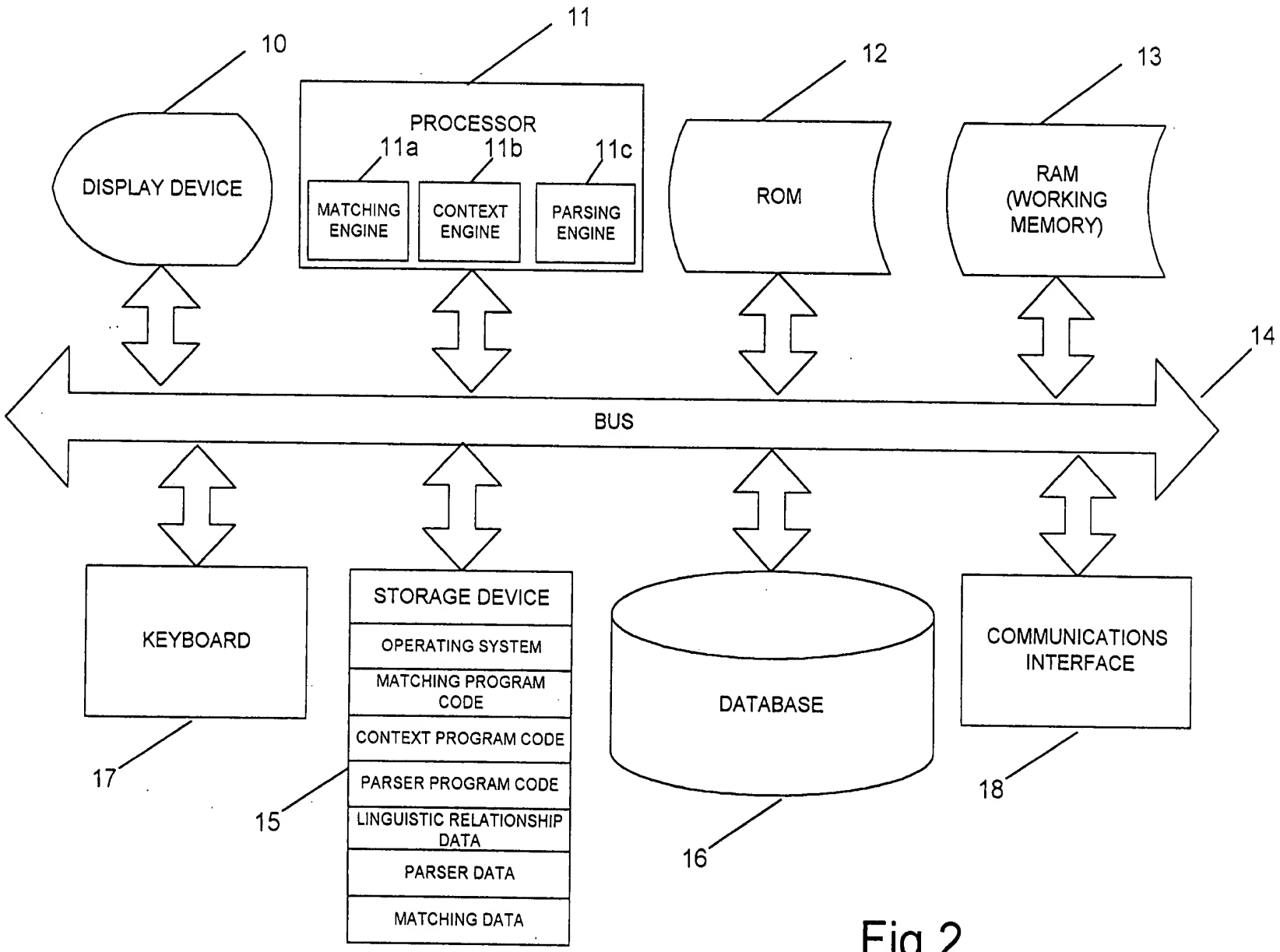
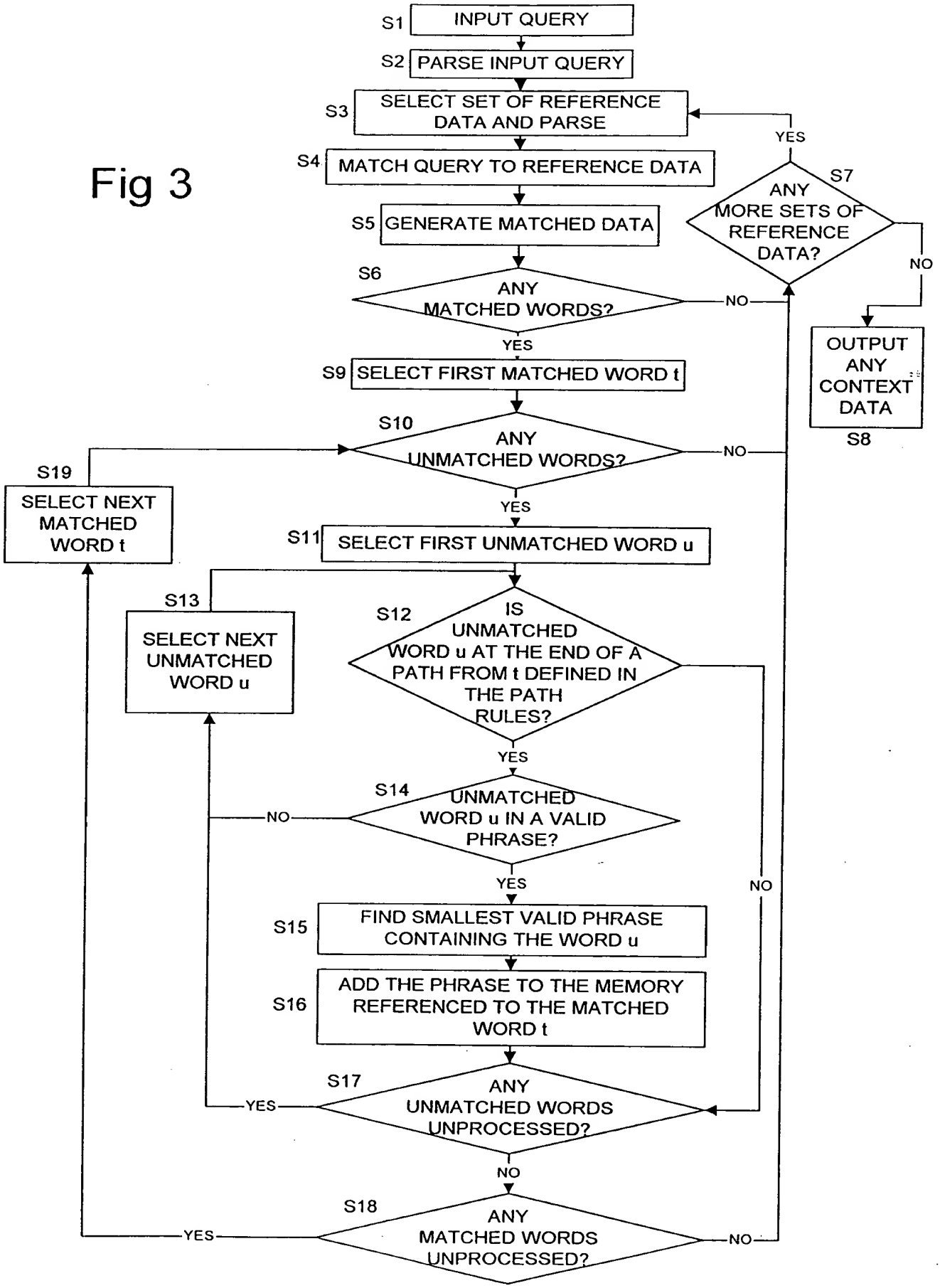

10
11
12
13
DISPLAY DEVICE
PROCESSOR
11a
11b
11c
MATCHING ENGINE
CONTEXT ENGINE
PARSING ENGINE
ROM
RAM (WORKING MEMORY)
14
BUS
KEYBOARD
STORAGE DEVICE
OPERATING SYSTEM
MATCHING PROGRAM CODE
CONTEXT PROGRAM CODE
PARSER PROGRAM CODE
LINGUISTIC RELATIONSHIP DATA
PARSER DATA
MATCHING DATA
DATABASE
COMMUNICATIONS INTERFACE
17
15
16
18

Fig 2

Fig 3


S1
INPUT QUERY
S2
PARSE INPUT QUERY
S3
SELECT SET OF REFERENCE DATA AND PARSE
S4
MATCH QUERY TO REFERENCE DATA
S5
GENERATE MATCHED DATA
S6
ANY MATCHED WORDS?
NO
YES
S7
ANY MORE SETS OF REFERENCE DATA?
YES
NO
OUTPUT ANY CONTEXT DATA
S8
S9
SELECT FIRST MATCHED WORD t
S10
ANY UNMATCHED WORDS?
NO
YES
S11
SELECT FIRST UNMATCHED WORD u
S12
IS UNMATCHED WORD u AT THE END OF A PATH FROM t DEFINED IN THE PATH RULES?
YES
NO
S13
SELECT NEXT UNMATCHED WORD u
S14
UNMATCHED WORD u IN A VALID PHRASE?
NO
YES
S15
FIND SMALLEST VALID PHRASE CONTAINING THE WORD u
S16
ADD THE PHRASE TO THE MEMORY REFERENCED TO THE MATCHED WORD t
S17
ANY UNMATCHED WORDS UNPROCESSED?
YES
NO
S18
ANY MATCHED WORDS UNPROCESSED?
YES
NO
S19
SELECT NEXT MATCHED WORD t

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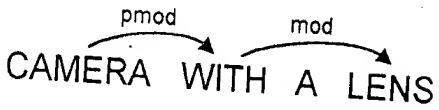

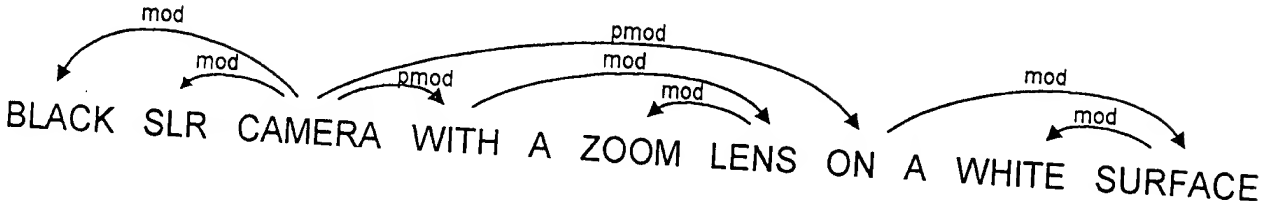

Fig 4

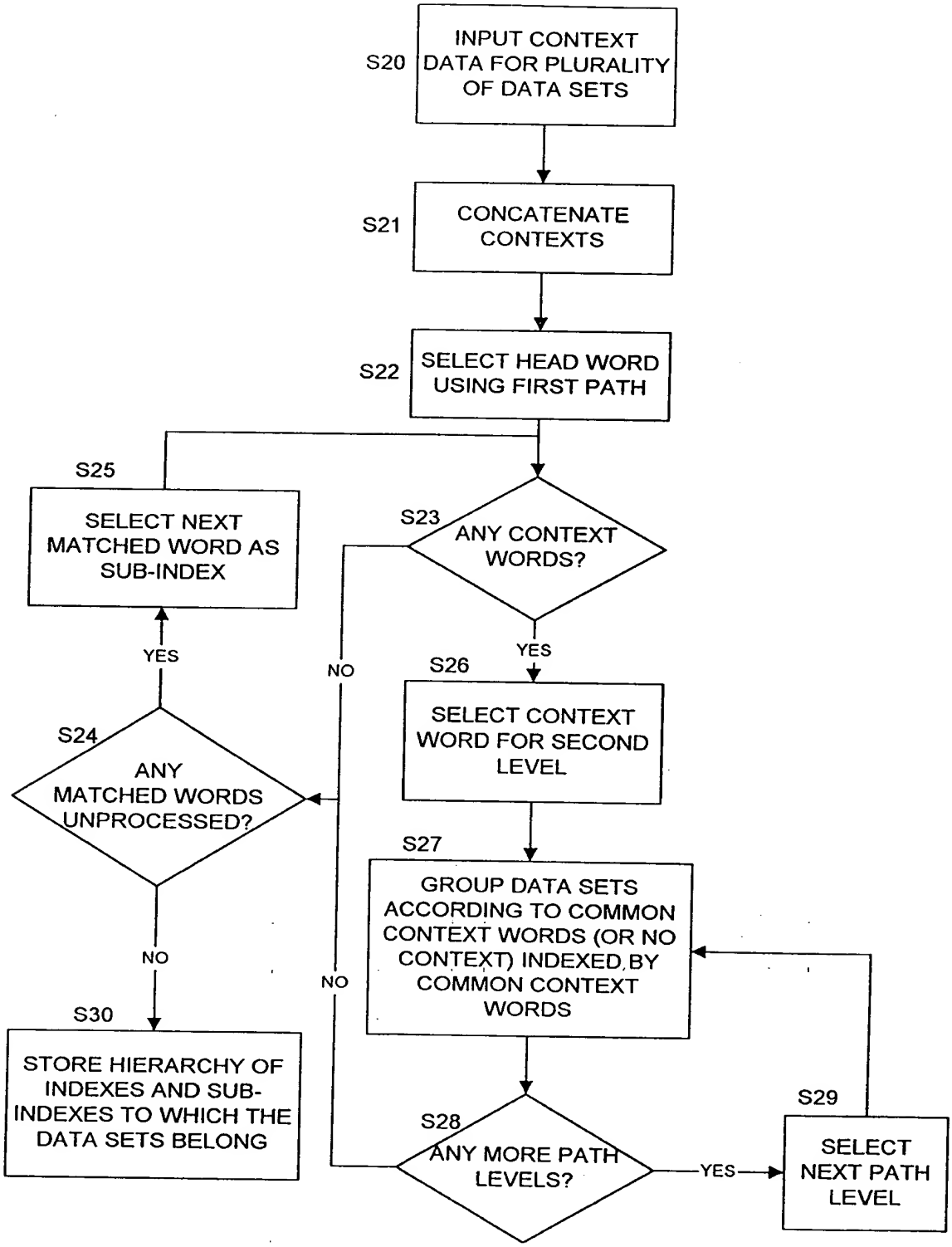
S20
INPUT CONTEXT DATA FOR PLURALITY OF DATA SETS
S21
CONCATENATE CONTEXTS
S22
SELECT HEAD WORD USING FIRST PATH
S23
ANY CONTEXT WORDS?
YES
NO
S25
SELECT NEXT MATCHED WORD AS SUB-INDEX
S26
SELECT CONTEXT WORD FOR SECOND LEVEL
S24
ANY MATCHED WORDS UNPROCESSED?
YES
NO
S27
GROUP DATA SETS ACCORDING TO COMMON CONTEXT WORDS (OR NO CONTEXT) INDEXED BY COMMON CONTEXT WORDS
S28
ANY MORE PATH LEVELS?
YES
NO
S29
SELECT NEXT PATH LEVEL
S30
STORE HIERARCHY OF INDEXES AND SUB-INDEXES TO WHICH THE DATA SETS BELONG

Fig 5

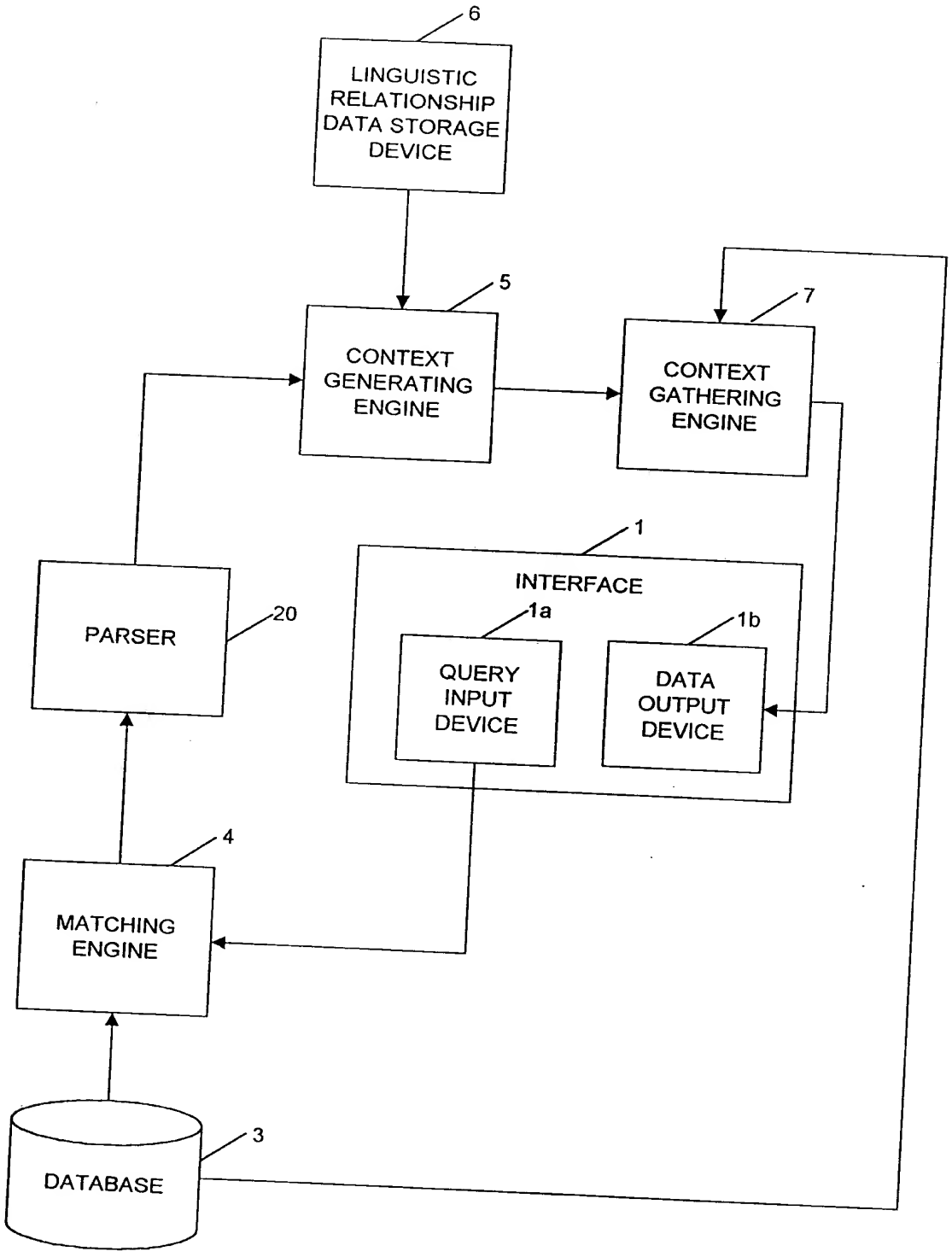
6
LINGUISTIC RELATIONSHIP DATA STORAGE DEVICE
5
CONTEXT GENERATING ENGINE
7
CONTEXT GATHERING ENGINE
1
INTERFACE
1a
QUERY INPUT DEVICE
1b
DATA OUTPUT DEVICE
PARSER
20
4
MATCHING ENGINE
3
DATABASE

Fig 6